

What is claimed is:

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1. A current collector for use in a secondary battery consisting of a metal foil provided with a large number of penetrated holes, each of which has a complicated shape and 5 satisfies the following expressions (1) and (2):

$$0.05 \leq S \leq 50 \quad \dots \dots (1)$$

$$1.30 \leq M/N \leq 100 \quad \dots \dots (2)$$

[where: S is an area (mm^2) of the penetrated hole, M is a periphery length (mm) of the penetrated hole, and N is a periphery length 10 (mm) of a virtual circle having the area S of the penetrated hole.]

2. A current collector for use in a secondary battery according to claim 1, wherein ^{the} thickness of the metal foil is in the range of 5 to 100 μ m.

3. A method for producing a current collector for use in 15 a secondary battery according to claim 1, wherein by passing a metal foil without hole through between a concavo-convex roll having a large number of convex parts and a smoothing roll under a certain pressure, portions of the metal foil without hole 20 pressed by the convex parts of said concavo-convex roll are converted into penetrated holes.

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4. A method for producing a current collector for use in a secondary battery according to claim 1, wherein after converting the portions of a metal foil without hole into penetrated holes by passing the metal foil without hole through 25 between a concavo-convex roll having a large number of convex

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parts and a smoothing roll under a certain pressure, the metal foil with the penetrated holes is caused to pass further through between a pair of metal smoothing rolls, whereby burrs produced at each periphery of the penetrated holes are removed.